REMARKS

The Office Action dated August 9, 2005 has been carefully considered. Claims 1, 9 and 12 have been amended. Claims 2 and 11 have been canceled. Claims 1, 4-10, 12-17 and 19 are in this application.

The Examiner indicated that the replacement drawings which were received on May 20, 2005, were disapproved. Applicants note that replacement drawings were also submitted on July 14, 2005 in which reference lines for reference numerals 50 and 57 have been defined. The Examiner indicated that both reference numerals 57 and 55 and reference numerals 50 and 52 appear to be pointing at the same thing. Applicants revised the drawings and clarified the reference lines and submit that 55 points to a washer, while 57 points to a fixing part which is a general area, including, bolt 56, washer 55 and nut 54. Applicants submit that 52 points to support ring 52, while joint part 50 points to the joint between support ring 52 and inner wall 53.

Claims 1, 4-10, 12-17 and 19 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claim 9 has been amended to recite a splash collision plate being a dualflow tray having an opening area ratio of the tray in the range of 30% to 70% or a splash collision plate being a disc-and-doughnut type collision plate and/or a segment baffle type collision plate having a total opening area of the collision plate and a segmental opening in the range of 10% to 90% relative to a cross section of the column. Applicants note that support for this amendment is found throughout the specification and in particular on page 14, lines 22-31.

The previously presented claims 1, 4-8, 10-12, 17 and 19 were rejected under 35 U.S.C. § 103 as obvious in view of U.S. Patent No. 6,214,174 to Matsumoto et al. ("Matsumoto '174") with or with out U.S. Patent No. 4,304,738 to Nutter.

Applicants submit that the cited references do not teach or suggest providing a liquid passing opening to a joint part between the support ring and the inner wall of the column as defined in present claim 1. To the contrary, Matsumoto '174 discloses openings between the joint and the wall. There is no teaching or suggestion of providing liquid passing opening to a joint part between the support ring and the inner wall. Comparing the opening of

Matsumoto '174 with the liquid passing opening of the present claim 1, there is difference of the placement of the openings. In accordance with the horizontal clamp of Matsumoto '174, puddles tend to occur nearby the clamp to polymerize. In contrast, in the present invention, a liquid passing opening is made, thereby preventing the formation of puddles and long operations are attained. Further, claim 1 includes the limitation of a vertical clamp which is not taught or suggested in Matsumoto '174.

In addition, Nutter does not disclose or suggest liquid passing openings provided to a joint part between the support ring and the inner wall of the column. Similar to Matsumoto '174 described above, it is clear that Nutter did not realize the advantages of proving a liquid passing opening in the connection part so as to prevent the formation of puddles thereon. Thus, Nutter does not cure the deficiencies of Matsumoto '174 noted above.

Accordingly, the invention defined by the present claims is not obvious in view of Matsumoto '174 alone or in combination with Nutter and withdrawal of this rejection is respectfully requested.

Claim 9 was rejected under 35 U.S.C. § 103 as obvious in view of Matsumoto '174 in view of U.S. Patent No. 5,164,125 to Binkley et al. Applicants submit that the teachings of these references do not disclose or suggest the invention defined by amended claim 9.

Matsumoto '174 do not teach or suggest performing purification by providing a splash plate in a lower part of a distillation column in which a splash collision plate is a dualflow tray having an opening area ratio of the tray in the range of 30% to 70% or the splash collision plate is a disc-and-doughnut type collision plate and/or a segment baffle type collision plate having a total opening area of the collision plate and a segmental opening in the range of 10% to 90% relative to a cross section of the column.

Binkley et al. disclose a downcomer tray assembly for liquid contact towers including a region of the tray beneath an upper downcomer with a raised perforated region. A splash deflector is dispersed outwardly of the raised inlet area to reduce liquid flowing from the inlet area and to deflect liquid splashed outwardly therefrom.

In contrast to the invention defined by the present claims, Binkley et al. do not teach or suggest a splash collision plate being a dualflow tray having an opening area ratio of the

tray in the range of 30% to 70% or a splash collision plate being a disc-and-doughnut type collision plate and/or a segment baffle type collision plate having a total opening area of the collision plate and a segmental opening in the range of 10% to 90% relative to a cross section of the column. Rather, Binkley et al. teach a weir, but do not teach or suggest the dual flow tray of the present invention.

As described on page 15, lines 11-15 of the present application, the use of a splash collision plate with the features of the present invention allow it to be possible to repress polymerization during the purification of an easily polymerizable substance. These features are not taught or suggested in Binkley et al. Rather, Binkley et al. is directed to preventing splashing of liquid for improved flow distillation and flow pattern across the tray.

Accordingly, the invention defined by claim 9 is not obvious in view of Matsumoto '174 alone or in combination with Binkley et al.

In view of the foregoing, Applicants submit that all pending claims are in condition for allowance and request that all claims be allowed. The Examiner is invited to contact the undersigned should she believe that this would expedite prosecution of this application. It is believed that no fee is required. The Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 13-2165.

Respectfully submitted,

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